

# Justin Barnett

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## Background

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Senior Software Engineer with 9+ years building low-latency, high-throughput systems. Expertise in C++/Go for exchange infrastructure, order matching engines, and real-time data pipelines. Experience reducing hot-path latency, cutting infrastructure costs, and leading small engineering teams in fast-paced environments.

## Skills

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**Core Languages:** C++ (Daily), Go (Daily), Python (Daily), Java (Intermediate)

**Infrastructure:** AWS (EC2, S3, DynamoDB, Lambda, RDS, AutoScaling, IAM, CloudFormation), GCP (App Engine, Cloud Storage, CloudSQL), Git, Django

**Domain Knowledge:** Derivatives Exchange Architecture, Market Maker Onboarding, Quantitative Investment Signals, Alternative Data Pipelines, DoD IL5 Compliance

## Professional Experience

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### Senior Software Engineer - dYdX Trading

June 2025 - Current

Go • *dYdX is a leading decentralized derivatives exchange processing billions in daily trading volume*

New York, NY

- Architected and shipped a high-frequency exchange API capable of handling **200k incoming messages/second** via REST and WebSocket, with optimized signature verification and order processing on the critical path
- Contributed to core **order matching engine** design and database storage architecture supporting **~400k TPS**, with direct involvement in data model decisions affecting trade execution integrity
- Drove architectural changes to the trading hot path that **reduced end-to-end latency 66%, from ~15ms to 5ms** — directly improving execution quality for market makers
- Reduced company-wide **AWS infrastructure costs by 25%** and **GCP costs by 20%** through topology redesign and resource optimization; led cross-team infrastructure planning discussions
- Onboarded institutional market makers, gathered trading workflow feedback, and led a team of 4 engineers to ship exchange features including trading candles, referral systems, and oracle provider integrations

### Software Engineer - Monarch (Time-Series DB) | Google

May 2022 - June 2025

C++, SQL, Go • *Monarch is Google's internal petabyte-scale time-series DB ingesting trillions of data points/day*

New York, NY

- Designed, prototyped, and led delivery of a bidirectional streaming API for real-time configuration change propagation, with built-in filtering and flow control — **saved 3 GB/s of global network bandwidth**
- Led a binary decomposition initiative separating core streaming from proxy infrastructure; produced resource impact analysis, executed migration across **26 dependent jobs and ~2 million running instances** with zero downtime
- Tech lead for a unified API surface project that replaced 50% (36) of public endpoints with consistent get/set/list interfaces, saving **\$300k/year** in maintenance costs and removing 10,000 lines of code; mentored 2 junior engineers through delivery
- Built a **directory-based permissioning system** with multi-layer latency optimization via caching, batching, and prefetching — reduced authorization overhead on hot read paths
- Led migration to consolidated database infrastructure, **cutting weekly on-call maintenance burden by 2 hours**; awarded internal Gold 'Healthy' team recognition
- Led compliance effort to achieve **US DoD IL5 certification**, enabling Google Cloud adoption by defense agencies — required deep coordination across security, infra, and legal teams

### Software Engineer (20%) | Google Ventures (GV)

Jan 2024 - July 2024

C++ • *Quantitative VC research platform*

New York, NY

- Built a **news aggregation and alerting pipeline** to monitor portfolio companies across the internet in real time; integrated signals directly into a quantitative VC investment platform

### Software Development Engineer, Prime Video Automation | Amazon

Aug 2020 – May 2022

Java, JavaScript

New York, NY

- Tech lead for partner onboarding migration software that **enabled a \$100M contract** with third-party merchandisers (Paramount, AMC+) to automate content publishing to the Prime Video storefront

- Built automated content scheduling features including calendar view, time windows, and bullseye targeting used by Prime Video marketing teams
- Led scaling initiative for image **CMS handling 250M+ requests/day**; resolved bottlenecks and improved service availability **from 99.95% to 99.99%**

### Software Consultant | Interlace Ventures

Sept 2021 – Sept 2022

Python • Quantitative investment advisory

New York, NY

- Built alternative data pipelines including asset graphs, LinkedIn scraping, and email sourcing to support quantitative investment decisions

### Founder & Tech Lead | Glazeneration LLC

Sept 2017 – Aug 2020

Python, Swift, iOS

Los Angeles, CA

- Tech Lead for Hairdoo (haircut on demand app); introduced CI/CD via Fastlane and Heroku, created staged namespaces for error isolation, and built a unified iOS component library
- Hired and led small engineering team to build iOS/Android features including dynamic booking, women's haircuts, and subscription flows
- Built, operated, and sold multiple ventures including Glazey (acquired)

### Software Engineering Intern - UberPOOL | Uber Technologies

May 2016 - Aug 2016

Objective-C, Go

San Francisco, CA

- Built and A/B tested a price comparison UI feature driving a 0.4% uplift in UberPOOL adoption; engineered Go backend services lifting promo code sharing by 0.1%

## Education

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### Grainger College of Engineering, University of Illinois at Urbana Champaign

Aug 2013 - May 2017 &

Bachelor of Science, Computer Engineering

May 2020 - Aug 2020

**Relevant coursework:** Operating Systems, Data Structures and Algorithms, Parallel

Programming, Computer Networking

## Achievements

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**Spacemob (Quantitative Research)** - Developed web scrapers and alternative data feeds for a distributed research group focused on AST Spacemobile (\$ASTS). Generated multiple actionable alpha signals adopted by the group.

**Udemy** - Created suite of Generative AI courses with 140,000+ students enrolled. Used by major global corps like Tata's Consulting Services and JP Morgan Chase